

### REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated July 25, 2008 has been received and its contents carefully reviewed.

Claims 1 and 17 are currently amended. Claims 5-8, 13, 16, 21-24, 29 and 32 have been canceled without prejudice or disclaimer. Claims 1-4, 9-12, 14, 15, 17-20, 25-28, 30 and 31 are currently pending. Reexamination and reconsideration of the pending claims is respectfully requested.

In the Office Action, claims 1-4, 11, 12, 14, 15, 17-20, 27, 28, 30 and 31 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,043,511 to Kim (hereinafter "Kim") in view of U.S. Publication No. 2002/0081847 to Jo et al. (hereinafter "Jo"), in view of U.S. Patent No. 5,739,877 to Onisawa et al. (hereinafter "Onisawa"), in view of U.S. Patent No. 6,674,502 to Terakado et al. (hereinafter "Terakado"), and further in view of U.S. Patent No. 5,650,834 to Nakagawa et al. (hereinafter "Nakagawa"), U.S. Patent No. 6,674,495 to Hong et al. (hereinafter "Hong"), and U.S. Patent No. 6,184,964 to Kameyama et al. (hereinafter "Kameyama"). Claims 9, 10, 25 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kim in view of Jo, in view of Onisawa, in view of Terakado, and further in view of Nakagawa, Hong and Kameyama, and further in view of U.S. Patent No. 6,091,464 to Song (hereinafter "Song").

The rejection of claims 1-4, 11, 12, 14, 15, 17-20, 27, 28, 30 and 31 as being unpatentable over Kim in view of Jo, Onisawa, in view of Terakado, and further in view of Nakagawa, Hong and Kameyama is respectfully traversed and reconsideration is requested.

Claim 1, as amended, is allowable over the cited references in that claim1 recites a combination of elements including, for example, "... a buffer layer between the substrate and the first barrier metal layer; ... wherein the metallic material is one of tantalum (Ta) and titanium (Ti), and wherein the buffer layer protects the substrate from an etchant used for etching tantalum (Ta) or titanium (Ti); ...." None of the cited references, singly or in combination, teaches or suggests at least these features of the claimed invention. Accordingly, Applicants

respectfully submit that claim 1 and claims 2-4, 11, 12, 14 and 15, which depend therefrom, are allowable over the cited references.

In addition, Applicant respectfully submits that there is no motivation for one of ordinary skill in the art to combine the cited references and arrive at the claimed invention with any reasonable expectation of success. As best understood, Terakado discloses a thin film transistor substrate having a nitride layer 302, a first Mo-N thin film 303, a Mo thin film 304 and a second Mo-N thin film 305. See column 10, lines 11-22. The gate electrode GT of Terakado does not include a double metal layer having a first barrier metal layer and a first copper layer. Instead, the gate electrode GT of Terakado includes the first and second Mo-N thin films 303 and 305 and the Mo thin film 304 between the first and second Mo-N thin films 303 and 305. Further, Terakado neither teaches nor suggests that the nitride layer 302 protects a glass substrate 301 from an etchant used for etching Mo-N or Mo. Therefore, Applicants respectfully submit that there is no motivation to combine Terakado with the other cited references.

Similarly, Claim 17, as amended, is allowable over the cited references in that claim 17 recites a combination of elements including, for example, "... forming a buffer layer between the substrate and the first barrier metal layer; ... wherein the metallic material is one of tantalum (Ta) and titanium (Ti), and wherein the buffer layer protects the substrate from an etchant used for etching tantalum (Ta) or titanium (Ti); ...." None of the cited references, singly or in combination, teaches or suggests at least these features of the claimed invention. Accordingly, Applicants respectfully submit that claim 17 and claims 18-20, 27, 28, 30 and 31, which depend therefrom, are allowable over the cited references.

In addition, Applicants respectfully submit that there is no motivation to combine Terakado with the other cited references.

The rejection of claims 9, 10, 25 and 26 as being unpatentable over Kim in view of Jo, in view of Onisawa, in view of Terakado, and further in view of Nakagawa, Hong and Kameyama, and further in view Song is respectfully traversed and reconsideration is requested.

Applicants respectfully submit that Song fails to cure the aforementioned defects associated with the teachings of Kim, Jo, Onisawa, Terakado, Nakagawa, Hong and Kameyama. None of the cited references, singly or in combination, teaches or suggests "... a buffer layer between the substrate and the first barrier metal layer; ... wherein the metallic material is one of tantalum (Ta) and titanium (Ti), and wherein the buffer layer protects the substrate from an etchant used for etching tantalum (Ta) or titanium (Ti); ...." as recited in independent claim 1 and "... forming a buffer layer between the substrate and the first barrier metal layer; ... wherein the metallic material is one of tantalum (Ta) and titanium (Ti), and wherein the buffer layer protects the substrate from an etchant used for etching tantalum (Ta) or titanium (Ti); ...." of independent claim 17. For at least this reason, claims 9 and 10, which depend from claim 1, and claims 25 and 26, which depend from claim 17, are allowable over the cited references.

Applicants believe the foregoing remarks place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911.

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Please credit any overpayment to deposit Account No. 50-0911.

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